

Claims

1. A method of diagnosing a mammal having or at risk of having an autoimmune condition, wherein said a reduction in NTPDase biological activity identifies said mammal as having or at risk of having said condition.

2. The method of claim 1, wherein said autoimmune condition is Addison's disease, alopecia, ankylosing spondylitis, antiphospholipid syndrome, Behcet's disease, chronic fatigue syndrome, Crohn's disease, ulcerative colitis, diabetes, fibromyalgia, Goodpasture syndrome, Graves' disease, idiopathic thrombocytopenic purpura, lupus, Meniere's multiple sclerosis, myasthenia gravis, pemphigus vulgaris, primary biliary cirrhosis, psoriasis, rheumatoid arthritis, rheumatic fever, sarcoidosis, scleroderma, vasculitis, vitiligo, or Wegener's granulomatosis.

3. The method of claim 1, wherein said reduction in said level of NTPDase activity is a reduction in the level of NTPDase mRNA, NTPDase protein, or the phosphohydrolytic activity of NTPDase.

4. A method of diagnosing a mammal having or at risk of having an autoimmune condition, wherein said an increase in P2 receptor biological activity identifies said mammal as having or at risk of having said condition.

5. The method of claim 4, wherein said autoimmune condition is Addison's disease, alopecia, ankylosing spondylitis, antiphospholipid syndrome, Behcet's disease, chronic fatigue syndrome, Crohn's disease, ulcerative colitis, diabetes, fibromyalgia, Goodpasture syndrome, Graves' disease, idiopathic thrombocytopenic purpura, lupus, Meniere's multiple sclerosis, myasthenia gravis, pemphigus vulgaris, primary biliary

cirrhosis, psoriasis, rheumatoid arthritis, rheumatic fever, sarcoidosis, scleroderma, vasculitis, vitiligo, or Wegener's granulomatosis.

6. The method of claim 4, wherein said increase in said level of P2 receptor activity is an increase in the level of P2 receptor mRNA, P2 receptor protein, or the biological activity of the P2 receptor.

7. A method for identifying a candidate compound for treating, reducing, or preventing an autoimmune condition in a mammal, said method comprising:

(a) contacting a cell expressing a NTPDase gene with a candidate compound; and
(b) measuring NTPDase gene expression or NTPDase protein activity in said cell, a candidate compound that increases said expression or said activity, relative to NTPDase expression or activity in a cell not contacted with said candidate compound, identifying said candidate compound as a candidate compound useful for treating, reducing, or preventing an autoimmune disorder in a mammal.

8. The method of claim 7, wherein said NTPDase gene is a NTPDase fusion gene.

9. The method of claim 7, wherein step (b) comprises measuring expression of NTPDase mRNA or protein.

10. The method of claims 7, wherein said NTPDase is CD39.

11. The method of claim 7, wherein said cell is a mammalian cell.

12. The method of claim 11, wherein said cell is a rodent cell.

13. A method for identifying a candidate compound for treating, reducing, or preventing an autoimmune condition in a mammal, said method comprising:

(a) contacting a cell expressing a P2 receptor gene with a candidate compound; and

(b) measuring P2 receptor gene expression or P2 receptor activity in said cell, a candidate compound that decreases said expression or said activity, relative to P2 receptor expression or activity in a cell not contacted with said candidate compound, identifying said candidate compound as a candidate compound useful for treating, reducing, or preventing said autoimmune disorder in a mammal.

14. The method of claim 13, wherein said P2 receptor gene is a P2 receptor fusion gene.

15. The method of claim 13, wherein step (b) comprises measuring expression of P2 receptor mRNA or protein.

16. The method of claim 13, wherein said cell is a mammalian cell.

17. The method of claim 16, wherein said cell is a rodent cell.

18. A method for identifying a candidate compound for treating, reducing, or preventing an autoimmune disorder in a mammal, said method comprising:

(a) contacting NTPDase protein with a candidate compound; and

(b) determining whether said candidate compound binds said NTPDase protein, a candidate compound that binds said NTPDase protein and increases the activity of NTPDase being a candidate compound useful for treating, reducing, or preventing said autoimmune disorder.

19. The method of claim 18, wherein said NTPDase is human NTPDase.

20. The method of claims 18, wherein said NTPDase is CD39.

21. A method for identifying a candidate compound for treating, reducing, or preventing an autoimmune disorder in a mammal, said method comprising:

- (a) contacting P2 receptor with a candidate compound; and
- (b) determining whether said candidate compound binds said P2 receptor, a candidate compound that binds said P2 receptor and decreases the activity of P2 receptor being a candidate compound useful for treating, reducing, or preventing an autoimmune disorder.

22. The method of claim 21, wherein said P2 receptor is human P2 receptor.